

1 THE UNITED STATES PATENT AND TRADEMARK OFFICE

2 APPLICANT : SIMON J. BROADLEY )

3 SERIAL NO. : 09/478,578 )

4 FILED : January 6, 2000 )

5 FOR: : SELF-OSCILLATING VARIABLE )  
6 FREQUENCY CLOSED LOOP )  
7 CLASS D AMPLIFIER )

Ex. K. Nguyen

Group 2817

8 CONTINUING PROSECUTION APPLICATION (CPA)  
9 PRELIMINARY AMENDMENT

10 Hon. Commissioner of  
11 Patents and Trademarks,  
12 Washington, D.C. 20231

13 Dear Sir:

14  
15 Kindly cancel Claims 1 to 3 and insert new Claims 4 to 6.  
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22

23 I hereby certify that this correspondence is being  
24 deposited with the United States Postal Service as  
25 EXPRESS MAIL NO. ET 613 018 752 US  
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27 PATENTS AND TRADEMARKS, Washington,  
28 D.C. 20231 on November 5, 2001

TOD R. NISSLE, Reg. No. 29,241

November 5, 2001

DATE

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1 The foregoing amendments are reflected in the attached **APPENDIX I:**  
2 **Replacements, Deletions, Additions** and **APPENDIX II: Marked up Versions.**

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5 COMMENTS

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7 The new Claims 4 to 6 specify that the amplifier circuit utilizes is a **non-**  
8 **inverting, negative feedback** error amplifier circuit as indicated by reference character  
9 14 in Fig. 2 of the application. A non-inverting, negative feedback error amplifier circuit  
10 does not appear to be utilized in the Higashiyama et al. or Pullen et al (U.S. 6,107,875)  
11 references of record.  
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14 Respectfully submitted,

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17  
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22 Attorney's Docket No. 995-P-3  
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## **APPENDIX I: Replacements, Deletions, Additions**

## REPLACEMENTS

- I. Title: None.
- II. Specification: None.
- III. Claims: None.
- IV. Abstract: None.

## DELETIONS


- I. Title: None.
- II. Specification: None.
- III. Claims

Delete Claims 1 to 3.

- IV. Abstract: None.

## ADDITIONS

- I. Title: None.
- II. Specification: None
- III. Claims

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4. A self oscillating audio Class D amplifier, comprising
- (a) a detector for receiving a PVM waveform control signal and producing a digital waveform switching signal to activate one of a pair including a positive switch and a negative switch to correct gain produced by the Class D amplifier;
  - (b) an output stage including a positive switch and a negative switch, said output stage receiving said switching signal and activating one of said switches to produce a digital driving signal;
  - (c) an output filter to receive said digital driving signal, remove switching noise and provide an amplified audio analog output signal to drive a load;
  - (d) a non-inverting, negative feedback error amplifier circuit to
    - (i) receive said amplified analog output signal and compare said output signal to said input signal for gain-correction purposes, and
    - (ii) produce said PVM waveform control signal.
5. A self oscillating audio Class D amplifier, comprising
- (a) a detector for receiving a PVM waveform control signal and producing a digital waveform switching signal to activate one of a pair including a positive switch and a negative switch to correct gain produced by the Class D amplifier;
  - (b) an output stage including a positive switch and a negative switch, said output stage receiving said switching signal and activating one of said switches to produce a digital driving signal;
  - (c) an output filter to receive said digital driving signal, remove switching noise and provide an amplified audio analog output signal to drive a load;
  - (d) a non-inverting, negative feedback error amplifier circuit to
    - (i) receive said amplified analog output signal and compare said output signal to said input signal for gain-correction purposes, and
    - (ii) produce said PVM waveform control signal;

the operation of said amplifier slowing as the magnitude of the error in gain increases.

6. A self oscillating audio Class D amplifier, comprising
- (a) a variable frequency zero crossing detector for receiving a PVM waveform control signal and producing a digital waveform switching signal to activate one of a pair including a positive switch and a negative switch to correct gain produced by the Class D amplifier;
  - (b) an output stage including a positive switch and a negative switch, said output stage receiving said switching signal and activating one of said switches to produce a digital driving signal;
  - (c) an output filter to receive said digital driving signal, remove switching noise and provide an amplified audio analog output signal to drive a load;
  - (d) a non-inverting, negative feedback, error amplifier circuit to
    - (i) receive said amplified analog output signal and compare said output signal to said input signal for gain-correction purposes, and
    - (ii) produce said PVM waveform control signal;

the operation of said amplifier slowing as the magnitude of the error in gain increases.

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IV. Abstract: None.

## **APPENDIX II: Marked Up Versions**

### Marked Up Versions

I. Title: None.

II. Specification: None.

III. Claims: None.

IV. Abstract: None.